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Tables

5.13 WASTE MANAGEMENT

In accordance with CEC regulations, this section evaluates the potential impacts of non-hazardous and hazardous wastes associated with construction and operation of the proposed Salton Sea Unit 6 Project (SSU6 Project), including the installation of waterlines, production and injection wells, and electrical transmission lines and upgrading of access roads. Tables are found at the end of this section.

The existing conditions of the project site are described in Section 5.13.1. The types of waste that would be generated during the construction and operation phases for the proposed project are described in the following sections. The waste disposal sites for both non-hazardous and hazardous wastes have been identified to evaluate whether adequate disposal capacity is available for the proposed project. The mitigation measures (i.e., best management practices) that would be used by the proposed project to manage and minimize waste generation are also described. This section includes a discussion of the relevant federal, state, and local requirements and evaluates the conformance of the proposed project with these requirements.

5.13.1 Affected Environment

The proposed 160-acre SSU6 Project is south of the Salton Sea. This region of the Imperial Valley is used mostly for agriculture and geothermal power production.

A Phase I Environmental Site Assessment (ESA) of the proposed SSU6 Project site (see Appendix O) was performed in accordance with the American Society for Testing and Materials (ASTM) Standard Practice for Environmental Site Assessment: Phase I Site Assessment Process E-1527-00 as required by the CEC for an AFC (URS, 2001). Based on the site reconnaissance, interviews, historical review, and agency records review no known underground storage tanks (USTs) were identified on the 160-acre site (property). The Phase I ESA concluded that no Recognized Environmental Conditions (REC) were observed on the subject site or surrounding property except for the following:

- Potential impacts because of the unknown use of concrete slabs, and an empty, plastic, aboveground storage tank, indicating the possible presence of a former chemical storage area, in the northeast portion of the subject property.
- Potential releases of hazardous materials (e.g., drilling fluids, fuel, oil, etc.) to the ground from several exploratory and abandoned geothermal wells, and installation and maintenance of three existing onsite geothermal wells in the southwest and southeast portions of the subject property.
- Possible impacts to shallow soil from the burned area observed in the southwest portion of the subject property.
- Potential pesticide and herbicide contamination of surface and subsurface soil because of past agricultural practices on the property may have included the use of currently regulated and banned substances, such as organochlorine pesticides and chlorinated herbicides.

By definition under ASTM designation E-1527-00, the term "Recognized Environmental Condition" means the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. The term is not intended to include de minimis conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. A copy of the Phase I ESA is contained in Appendix O.

It should be noted that although minor RECs were identified, soil will not be exported from the site during grading and construction at the property. Therefore, no provisions for disposal of soil off site are necessary. Additionally, the identified RECs do not include any known hazardous substance releases; only potential releases or possible impacts based on site usage were identified in the Phase I ESA. Furthermore, potentially elevated concentrations of pesticides and herbicides in surface and subsurface soil are typical of the surrounding area, which is predominantly used for agricultural purposes. Groundwater nearby is of poor quality because of high total dissolved solids concentrations. Based on URS' experience, a Phase II assessment or remediation of these RECs, given the proposed development of an industrial project, would not be required. If stained or odoriferous soil is encountered during grading and construction, the soil would be segregated and analyzed. Workers would be trained to identify potentially contaminated soil and on proper procedures for handling such soil.

5.13.2 Environmental Consequences

5.13.2.1 Project Waste Generation

Wastes that would be generated during both the construction and the operation phases of the proposed project were identified to determine whether the proposed project would result in any potentially significant impacts. The significance criteria are based on the California Environmental Quality Act (CEQA) Guidelines, Appendix G, Environmental Checklist Form (approved January 1, 1999) and on performance standards or thresholds adopted by responsible agencies. An impact may be considered significant if any of the following apply:

- Construction activities result in waste materials being introduced into the environment in violation of federal, state, or local waste management and disposal regulations.
- Construction activities generate waste materials that exceed the receiving capacity of appropriate disposal facilities.
- Operation of the facility results in waste materials being introduced into the environment in violation of federal, state, or local waste management and disposal regulations.
- Operation activities generate waste materials that exceed the receiving capacity of appropriate disposal facilities.

The following priorities would be established for waste management during the construction and operation phases for the facility:

- Source reduction (preferred option).
- Recycling.
- Treatment.
- Disposal (least desirable option).

Disposal would be used only for wastes that cannot be eliminated through source reduction or addressed by recycling or treatment. Waste production will be reduced in accordance with the California Integrated Waste Management Act, Title 22, California Code of Regulations (CCR), §67100. At least 50 percent of all operational solid waste that would be accepted at a Class III landfill would be recycled.

5.13.2.1.1 Construction Phase

During construction of all facilities of the SSU6 Project, the primary waste generated would be solid non-hazardous waste. Some non-hazardous liquid waste(s), however, would also be generated. It is anticipated that some hazardous solid and liquid waste(s) would also be generated during plant construction. Additionally, solid non-hazardous waste – and possibly some hazardous waste – would also be generated during offsite project improvements, including the construction of production and injection wells. Generation of hazardous waste during construction of other offsite improvements is anticipated to be minimal and is considered less than significant. The types of waste(s) and estimated quantities are described below and summarized in Table 5.13-1.

The non-hazardous solid wastes produced during construction would be collected in onsite Dumpsters and periodically picked up for disposal. The waste would be taken to a local landfill, such as the Allied Imperial Landfill and Recycling Facility, where recyclable materials would be removed and other wastes would be disposed of at an appropriate landfill. The disposal of wastewater would be coordinated by the construction contractor. Storm water would be discharged in accordance with the requirements of the construction storm water management permit obtained before construction. The generation of non-hazardous wastewater would be minimized through water conservation and re-use measures.

The construction contractor would be responsible for the storage and handling of all construction-related hazardous wastes. The construction contractor would manifest hazardous wastes for disposal at a permitted Class I facility or recycling facility. Should any load of drilling waste have hazardous characteristics, it would also be disposed of at a permitted Class I facility. The construction contractor would be the generator and would dispose of this waste in accordance with all federal, state, and local laws and regulations.

Non-Hazardous Solid Wastes

Non-hazardous solid wastes generated during the construction phase of the SSU6 would include excess scrap wood, concrete, empty containers (plastic, metal, glass, cardboard, and styrofoam), scrap metals, insulation (silicate and mineral wool), and drilling wastes. Anticipated waste streams and their estimated quantities are described below and summarized in Table 5.13-1.

Scrap Wood, Steel, Glass, Plastic, Paper, Calcium Silicate Insulation, and Mineral Wood Insulation

Scrap wood, steel, glass, plastic, paper, calcium silicate insulation, and mineral wood insulation would be generated from waste lumber, packing and insulation materials, and other construction- and office-related materials. Approximately 20 to 40 cubic yards per week are anticipated to be generated during construction of the SSU6 Project. Where practical, these wastes would be recycled. Non-hazardous wastes that are not recycled would be disposed of at a Class III landfill in accordance with all federal, state, and local regulations.

Oil-Absorbent Materials for Turbine Lube Oil Flushes and Normal Construction

Oil-absorbent materials would also be generated during lube oil flushes of steam turbines, as well as during the normal construction phase of the SSU6 Project. Small quantities of this waste would be generated occasionally. These materials would be sent to an appropriate disposal facility or to a laundry facility permitted to wash oily rags.

Oily Rags Generated During Normal Construction Activities and Lube Oil Flushes

Oily rags would also be generated during lube oil flushes of steam turbines, as well as during the normal construction phase SSU6 Project. Three to four 55-gallon drums of this waste would be generated each month. These materials would be sent to an appropriate disposal facility or to a laundry facility permitted to wash oily rags.

Drilling Wastes

Wet drilling wastes consist of soils, brine effluent, and other materials removed from the ground during the construction of production and injection wells. This waste would dry out in RWQCB-permitted, clay-lined mud sumps. The remaining solid waste would be tested for hazardous characteristics before disposal. Non-hazardous drilling wastes would be sent to Desert Valley Company's Monofill Facility, a Class II landfill. The Monofill facility is owned by an affiliate of the Applicant. If testing indicates that any load of drilling wastes is hazardous in character, it would be appropriately disposed of at a Class I hazardous waste landfill.

Non-Hazardous Liquid Wastes

Non-hazardous liquid wastes generated during construction would be mainly wastewater generated from sanitary waste, pipe hydrotesting, and equipment washing. Sanitary waste would be collected in portable, self-contained toilets serviced by an outside contractor. Approximately 440 gallons per day of sanitary wastes from portable chemical toilets would be pumped by licensed contractors and transported to a sanitary water treatment plant. Equipment wash water and hydrotest water would be contained in tanks or other storage containers at specifically designated areas. If the water is thought to contain free-phase hydrocarbons, it would be run through an oily water separator. Oil removed from the oil/water separator would be collected and taken off site by an oil recycler. The remaining water would be tested to determine its final disposition. If the water is contaminated, it would be removed from the site and disposed of at a liquid disposal facility. If the water is suitable for

discharge, it would be discharged to an Imperial Irrigation District (IID) drain canal. For construction activities, a Storm Water Pollution Prevention Plan (SWPPP) would be developed and implemented in accordance with all applicable state and local requirements.

As indicated in the above sections, the non-hazardous solid wastes that cannot be recycled or reused would be disposed of at a Class III landfill. The Allied Imperial Landfill will accept non-hazardous construction wastes except for drilling wastes. The Allied Imperial Landfill is the Applicant's preferred landfill for non-hazardous wastes because it is the closest Class III landfill to the proposed SSU6 Project that accepts non-residential wastes. Allied Imperial also has its own certified transport service. It is expected that the disposal of construction-related solid wastes from the facility would represent only a nominal (less than 0.01 percent) increase relative to current disposal volumes at this Class III landfill. This increase would not significantly affect the available landfill capacity and is considered a less-than-significant impact. Table 5.13-2 shows landfill locations, capacity, annual tonnage, and estimated closure dates.

Non-hazardous drilling wastes would be disposed of at Desert Valley Company's Monofill Facility. If 700,000 cubic feet of solid waste from drilling operations (a conservative estimate) were collected in mud sumps, this quantity would represent less than 2 percent of the total permitted capacity of the Monofill Facility landfill. The Monofill Facility has already permitted additional land for landfill use and will continue to add landfill capacity as needed. Drilling wastes would not significantly affect the available landfill capacity and are considered a less-than-significant impact.

Hazardous Wastes

Hazardous waste generated during construction would consist of empty drums, used and waste oil from turbine flushes, lead acid batteries, alkaline batteries, and used oil from the oil/water separator. Although drilling wastes are expected to be primarily non-hazardous, any drilling mud that has hazardous characteristics would also be disposed of as hazardous waste.

Empty Hazardous Materials Containers

Empty hazardous materials containers, including drums, would be generated during construction of SSU6 at a rate of about 1 cubic yard per week. These containers would be recycled, if possible, or disposed of at an appropriate Class I/II landfill.

Used and Waste Lube Oil During Steam Turbine Lube Oil Flushes

Used and waste lube oil would be generated during lube oil flushes of steam turbines during the construction phase. Less than 55 gallons of this waste would be generated during each flush period. Flush periods would occur approximately every three weeks. Used and waste oil would be recycled.

Spent Lead Acid Batteries

Approximately three lead acid batteries per year would be generated during the construction of SSU6. These batteries would be recycled at an appropriate recycling facility.

Spent Alkaline Batteries

Approximately 72 alkaline batteries would be generated each month during construction of SSU6. These batteries would be disposed of at an appropriate waste disposal facility.

The construction contractor would be considered the generator of hazardous waste associated with plant construction activities and would be responsible for proper handling of all hazardous wastes in accordance with all federal, state, and local regulations. This would include all licensing requirements, training of employees where required, accumulation limits and duration, and recordkeeping and reporting requirements. Wastes deemed hazardous would be collected in hazardous waste accumulation containers placed near the area of generation. After the end of each workday, the accumulation containers would be moved to the contractor's hazardous waste accumulation area, where hazardous wastes can be stored up to 90 days after the date of generation. All hazardous wastes would be removed from the site by a licensed hazardous waste hauler.

The types and quantities of hazardous wastes expected to be generated during construction activities at the facility are included in Table 5.13-1. The quantities of solid hazardous waste that would be generated are well below the capacity of the available disposal facilities, and most of the liquid hazardous wastes would be recycled. These increases in waste volume would not significantly affect the capacity of the available hazardous waste treatment and disposal facilities and are considered a less-than-significant impact.

5.13.2.1.2 Operation Phase

Non-Hazardous Solid Wastes

Operation and maintenance of the plant would generate non-hazardous solid wastes typical of geothermal power generation facilities in the Salton Sea area. These wastes would be composed primarily of a filter-cake of solids that would have been removed from the geothermal brine fluid. Filter-cake wastes, like drilling wastes produced during construction, would be tested for hazardous characteristics before disposal. It is anticipated that the 120 tons per day of generated filter-cake wastes would be generally non-hazardous and disposed of at the Class II Monofill Facility. Any hazardous filter-cake wastes would be disposed of at an appropriate Class I landfill. Additionally, the H2S abatement system would produce about 2.5 tons per day of solid waste, most of which would be elemental sulfur. Like the filter-cake waste removed from the geothermal brine, the sulfur waste would be tested for hazardous characteristics before disposal. It is also expected that the sulfur waste would be non-hazardous and disposed of at the Class II Monofill Facility. Any load of hazardous sulfur waste would be disposed of at an appropriate Class I landfill.

The latest permitted cell at Monofill Facility will begin operation in September 2003. This cell is permitted to accept 510 tons per day of solid waste. The 123 tons per day of filter-cake and sulfur wastes that would be produced by SSU6, in addition to operational filter-cake wastes from other geothermal operations owned by affiliates of the Applicant, would not exceed the 510-tons-per-day limit. Therefore, there would be no short-term impacts on disposal capacity because of the filter-cake and sulfur wastes from the SSU6 Project. This permitted cell, however, would close as early as 2012. Because SSU6 would continue to operate beyond 2012, additional landfill capacity for filter-cake wastes would be permitted and constructed by the Monofill Facility, or

arrangements for disposal would be made with a different landfill. The Monofill Facility has already permitted 160 acres of land for landfill use and will continue to add landfill capacity as needed. Non-hazardous filter-cake and sulfur wastes are currently not accepted by any Class III landfill in Imperial County. If the Monofill Facility is unable to accept filter-cake and sulfur wastes from SSU6, these wastes would be disposed of as hazardous waste at a Class I landfill.

Operational non-hazardous solid wastes would also include oily rages, scrap metal and plastic, insulation material, paper, glass, empty containers, and used equipment parts from maintenance activities, including used gaskets for piping flanges, pumps, spent filters, and spent turbine parts. Non-hazardous solid wastes would be recycled to the extent practical and the remainder disposed of regularly at a Class III landfill. The Allied Imperial Landfill is the Applicant's preferred landfill for non-hazardous wastes because it is the closest Class III landfill to the proposed SSU6 that accepts non-residential wastes. It is expected that the disposal of solid wastes from the facility would represent only a nominal (less than 0.1 percent) increase relative to current disposal volumes at the Class III landfill. These increases would not significantly alter the available landfill capacity and are considered a less-than-significant impact.

Non-Hazardous Liquid Wastes

The primary wastewater to be generated by the SSU6 Project would be clarifier effluent and cooling water blowdown (see Table 5.13-3). This wastewater would be discharged to injection wells for disposal and replenishment of the geothermal resource. Storm water from chemical storage, feed areas, and RO reject water would be collected in the brine pond prior to injection into dedicated injection wells. Additionally, oxygenated brine effluent in the clarifier would be directed to the brine pond during maintenance shutdowns and would be discharged into an injection well.

Oily liquids would be periodically pumped from the oil/water separator for disposal off site. Additionally, sludge from the septic system would be periodically removed and trucked off site for disposal.

The following summaries describe the plant's wastewater streams. Detailed summaries are presented in Section 3.3.4.3 in the Project Description.

Cooling Tower Wash-Down and Blow-Down

This wastewater would be injected into a dedicated injection well in accordance with regulations of the California Department of Oil and Gas.

Chemical Feed Area Drainage

Chemical feed area drainage consists of spillage, tank overflows, maintenance operations, and area washdowns. The chemical feed area drainage would be routed to the brine pond.

General Plant Drainage

General plant drainage consists of wastewater collected by sample drains, equipment drains, equipment leakage, and area washdowns. Wastewater collected in the general plant drainage

system would be routed to the brine pond. General plant drainage that potentially contains oil or grease would be first routed through an oil/water separator.

Clarifier Effluents

The liquid phase of the geothermal brine contains a large amount of solid material. Solids would be removed from the liquid in the clarifier, and the clarified liquid effluent would be sent to the injection wells.

Other than periodic septic pumping, no wastewater generated from the plant would require treatment at a municipal treatment facility or privately owned treatment works. Therefore, any impact to these area facilities would not be significant.

Hazardous Waste

The types and quantities of hazardous wastes expected to be generated at the facility are included in Table 5.13-3.

Brine pond solids and scale found in pipes, clarifiers, and separators during maintenance shutdowns will be disposed of as hazardous waste, along with any cleaning agents used to remove the scale.

Waste lubricants (hydraulic fluids, oils, grease, and oily filters) would be periodically generated during operation and maintenance of the facility. Waste oil would be collected and stored in appropriate containers and recycled by an approved contractor. It is anticipated that less than 5 gallons of waste lubricants would be generated each day. Additionally, small quantities of laboratory effluents discharge to a storage tank for offsite disposal to a Class I hazardous waste landfill.

Oil/water separator sludge would likely be sent to a treatment, storage, and disposal facility (TSDF)/recycling center for recycling.

The wastewater treatment system at SSU6 includes an abatement system with an activated carbon filter that would remove benzene from brine/steam condensor gases. The activated carbon filter media would be regenerated on site about once per week using process steam. Backwash from the carbon filter would contain small quantities of benzene (1400 ppm) and this backwash water would be discharged into an injection well.

Approximately once every three years, the carbon would be shipped back to the manufacturer so that it may be reactivated. Because the carbon may be reactivated multiple times, the disposal of carbon filter media would be a rare event.

The annual volume of hazardous waste would be greatest in a year when all the spent carbon media would be sent off site for reactivation. Most of this waste would be brine pond solids (approximately 16,700 tons) and spent carbon (about 20 tons). The brine pond solids would be sent to a hazardous waste landfill, and the spent carbon would be returned to the manufacturer for reactivation. Of the remaining hazardous waste, about 7.6 tons would be recycled and 2.5 tons would be disposed of at an appropriate facility. If any filter-cake waste were found to be hazardous, the amount of disposed hazardous waste would increase. The amount of hazardous waste that would require offsite disposal would result in a nominal (less than 0.01 percent) increase relative to

current disposal volumes at approved landfills in California (see Section 5.13.2.2) and is considered a less than significant impact.

To prevent impacts to human health or the environment, procedures would be developed for the proper handling, labeling, packaging, storage, recordkeeping, and disposal of hazardous waste. The following general procedures would be used:

- The facility would apply to the U.S. EPA for a U.S. EPA Hazardous Waste Generator Identification Number as a generator of hazardous waste.
- Hazardous wastes would be stored on site for less than 90 days in accordance with the requirements of Title 22, CCR.
- Hazardous wastes would be segregated for compatibility and stored in designated accumulation areas with appropriate secondary containment.
- Hazardous wastes would be picked up for transport only by licensed hazardous waste haulers. All hazardous wastes would be properly manifested to a permitted disposal facility.
- Hazardous waste documentation, including the biennial hazardous waste generator reports that would be submitted to the Department of Toxic Substances Control (DTSC), would be kept on site and accessible for inspection for at least three years.
- Employees would be trained in hazardous waste management, spill prevention and response, and waste minimization.
- Procedures would be developed to reduce the quantity of hazardous waste generated. Non-hazardous materials would be substituted for hazardous materials, and wastes would be recycled where possible.

5.13.2.2 Waste Disposal Sites

Table 5.13-2 lists the candidate disposal and recycling facilities that can be used for the non-hazardous waste produced by the facility. Currently, non-hazardous construction related drilling wastes and operational process filter-cake wastes may not be disposed of at any Imperial County operated landfill without approval of the Regional Water Quality Control Board (RWQCB) and the Imperial County Health Services Department. Drilling and filter-cake wastes may not be disposed of at the Allied Imperial Landfill under any circumstances. Drilling and filter-cake wastes would be disposed of at the Desert Valley Company's Monofill Facility.

Hazardous waste generated at the facility would be stored on site for less than 90 days at specified accumulation points. A licensed hazardous waste hauler would haul the waste to a TSDF or Class I landfill. Some of these facilities may only store waste, but others are permitted to treat waste for the recovery of reusable products or dispose of the waste by incineration, deep-well injection, or landfilling (incineration and deep-well injection are not available in California).

There were 137 Resource Conservation and Recovery Act (RCRA) TSDFs in California according to the U.S. Environmental Protection Agency (U.S. EPA) *Biennial RCRA Hazardous Waste Report* (U.S. EPA, 1999). Many of these facilities, however, are on military installations or industrial locations and do not accept waste from other generators.

There is one commercial TSDF in Imperial County, the Safety Kleen Westmoreland Class I landfill.

California has the following three hazardous waste (Class I) landfills that may be used for the disposal of hazardous waste:

- **Safety Kleen, Buttonwillow Landfill in Kern County:** The Buttonwillow Landfill has a permitted capacity of 10.9 million cubic yards. Approximately 1 million cubic yards of capacity are currently available in the first cell, but several other permitted cells have yet to be built. With an annual usage of about 130,000 cubic yards, the landfill is expected to remain open until at least 2100, assuming that all permitted cells are constructed. Buttonwillow is permitted to accept all hazardous wastes except flammables, polychlorinated biphenyl (PCB) wastes with concentrations exceeding 50 parts per million, medical wastes, explosives, and radioactive wastes with radioactivity greater than 20,000 picocuries.
- **Safety Kleen, Imperial County Landfill in Imperial County:** The current capacity of the landfill is limited and is expected to reach capacity before the end of summer 2002. Because of shortage of space in this landfill, Safety Kleen is currently sending a portion of its incoming hazardous waste to the Safety Kleen Buttonwillow facility in Kern County. The Imperial County facility has already permitted two additional landfills with a combined capacity of 2.72 million cubic yards (approximately 40 years at current disposal rates) and is awaiting its Authority to Construct the first section of one of the new landfills. The first section of the new landfill is planned to begin operation in the summer of 2002.
- **Chemical Waste Management, Kettleman Hills Landfill in Kings County:** The Kettleman Hills landfill has a permitted capacity of 5 million cubic yards for Class I waste. Approximately 1,000,000 cubic yards of hazardous wastes are disposed of each year. Chemical Waste Management hopes to get permitted modification shortly to use an additional 5 million cubic yards. The landfill is expected to reach capacity by 2007 with the current facility only, or in 2012 with the proposed permit modification. Currently, 499 acres of the land are permitted for landfill use.

There is currently no shortage of hazardous waste landfill capacity in California. The deposit rate has decreased by approximately 50 percent over the last several years because of source reduction by generators and the out-of-state transfer of waste considered hazardous under the Hazardous Waste Control Law (HWCL), but not under RCRA. The hazardous wastes that would be generated annually by the proposed project are expected to be well below 0.01 percent of the combined capacity of the three hazardous waste landfills. This amount is considered a less than significant impact.

5.13.2.3 Monitoring

Because the environmental impacts caused by the construction and operation of the facility are expected to be minimal, extensive monitoring programs are not required. Generated wastes would be monitored, sampled, and tested as required in accordance with the generator permit requirements throughout the life of the plant. Wastewater (storm water) discharged from the plant would be monitored in accordance with the waste discharge requirements specified by the RWQCB.

5.13.2.4 Temporary Facility Closure

If it becomes necessary to close the facility temporarily for any reason (because of flooding, damage from an earthquake, fire, storm, etc.), facility security would be maintained 24 hour per day and the CEC would be notified. A contingency plan for temporary closure would be prepared before startup of the facility to ensure compliance with all laws, ordinances, regulations, and standards (LORS) and to protect human health and the environment. Depending on the duration of any temporary shutdown, the plan would direct the safe shutdown of all equipment and the draining of all chemicals from the process. Any waste generated under these circumstances would be disposed of in accordance with all LORS.

5.13.2.5 Permanent Closure

The planned life of the facility is 30 years, though operation could be longer. A general closure plan identifying the handling and disposal requirements for non-hazardous and hazardous wastes would be prepared before closure. This plan would identify opportunities for recycling. All equipment containing liquids would be drained and decommissioned as part of closure procedures to protect public safety and the environment. Unused chemicals would be sold back to the suppliers or other purchasers where practicable. All non-hazardous wastes would be disposed of in appropriate landfills or recycled. Hazardous wastes would be disposed of according to all applicable LORS. The site would be secured 24 hours per day during the decommissioning activities.

5.13.3 Cumulative Impacts

Non-hazardous waste generated at the facility would add to the total waste generated in Imperial County and California. There are, however, adequate recycling facilities and landfill capacities to dispose of waste (excluding filter-cake waste) from Imperial County for future years. Allied Imperial Landfill estimates that it will reach its current capacity by 2014 but recently purchased 160 acres of land for future expansion. As of January 2001, nearby Imperial County public landfills had over 190,000 cubic yards of refuse capacity remaining. Sufficient capacity is currently available through 2019 from nearby county landfills, and long-term plans may justify landfill expansion. The impact of the non-hazardous solid waste (excluding filter-cake waste) generated by the plant is therefore not considered significant.

There is adequate permitted capacity at Desert Valley Monofill facility to dispose of filter-cake wastes produced by SSU6 and all other existing geothermal power plants owned by the Applicant in the Salton Sea area until 2012. To continue disposing of non-hazardous filter-cake waste beyond this date, additional landfill capacity for filter-cake wastes would be permitted and constructed by the Monofill Facility, or arrangements for disposal would be made with a different landfill. It should be noted that 160 acres of land permitted for landfill use is already available for expansion of the Monofill Facility. Therefore, the impact of the non-hazardous filter-cake waste generated by the plant is not considered significant.

The hazardous waste generated at the facility would be recycled and treated to the extent possible. California has more than adequate treatment and disposal capacity for hazardous

wastes that cannot be recycled. The impact of the hazardous waste generated by the plant is therefore not considered significant.

5.13.4 Mitigation Measures

No significant impacts regarding waste management are expected from the proposed project; however, several best management practices would be used by the facility to manage and minimize the amount of waste generated

- **Waste-1:** The Applicant would obtain a hazardous waste generator EPA ID number from the DTSC prior to generating any hazardous waste.
- **Waste-2:** Prior to the start of both construction and operations the Applicant would submit a waste management plan for all wastes to be generated during construction and operation of the facility

5.13.5 Agency Contacts and Applicable Laws, Ordinances, Regulations, and Standards

Information regarding waste management agency contacts and LORS is presented in Section 5.14.5 in the Hazardous Materials Handling Section.

5.13.5.1 Permits Required and Permit Schedule

No hazardous waste permits are required except for applying for a U.S. EPA Hazardous Waste Generator Identification Number.

5.13.6 References

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Chemical Waste Management, Kettleman Hills, 2002. Telephone communication between the Environmental Compliance Manager at Chemical Waste Management Kettleman Hills Landfill and Leslie Fischbein of URS, January 2002.

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Ochs, Michelle, 2002. Telephone communication between Michelle Ochs of the Regional Water Quality Control Board Region 7 and Leslie Fischbein of URS, January 26, 2002.

Smith, Allen, 2002. Communication between Allen Smith, Environmental Compliance Manager at Safety Kleen's Westmorland facility, and Leslie Fischbein of URS, January 21, 2002.

URS (URS Corporation), 2001. *Phase I Environmental Site Assessment of the Proposed Salton Sea Unit 6 Site Near Calipatria, California,* draft, March 29, 2001 (included as Appendix O to this report.)

U.S. EPA (U.S. Environmental Protection Agency), 1999. *Biennial RCRA Hazardous Waste Report*.

Yarborough, Terri, 2002. Communication between Terri Yarborough of Chemical Waste Management and Leslie Fischbein of URS, January 16, 2002.

Table 5.13-1
SUMMARY OF ANTICIPATED CONSTRUCTION WASTE STREAMS AND MANAGEMENT METHODS

Waste Stream	Anticipated Waste Stream Classification	Estimated Quantity[1]	Estimated Frequency of Generation	Waste Management Method	
				On Site	Offsite Treatment
Scrap wood, steel, glass, plastic, paper, calcium silicate insulation, mineral wood insulation	Non-hazardous solids	25-40 cu yd	Weekly	Containerize, housekeeping	Class III Waste disposal facility
Empty hazardous material containers – drums	Recyclable Hazardous	1 cubic yard	Weekly	Store for less than 90 days	Recondition or recycle Class I/II landfill disposal
Used and waste lube oil during Steam Turbine Lube Oil Flushes	Recyclable Hazardous	<55 gallons	Each flush period, approximately every 3 weeks	Store for less than 90 days	Recycle
Oil absorbent materials turbine lube oil flushes and normal construction	Nonhazardous	Small Quantities	As needed	Store for less than 1 year	Waste disposal facility or laundry (permitted to wash rags)
Oily rags generated during normal construction activities lube oil flushes	Nonhazardous	3-4 55 gallon drums	Monthly	Store for less than 1 year	Waste disposal facility or laundry (permitted to wash rags)
Spent lead acid batteries	Hazardous Recyclable	3 batteries	Yearly	Store for less than 1 year	Recycle
Spent alkaline batteries	Hazardous	72 batteries	Monthly	Store for less than 1 year	Waste disposal facility
Sanitary Waste-Portable Chemical Toilets and Construction Office Holding Tanks	Sanitary	440 gallons	Daily	Chemical Toilets and Holding Tanks	Pumped by licensed contractors and transported to sanitary water treatment plant
Drilling Waste	Non-Hazardous[2]	300,000 – 700,000 cubic feet	During Construction of Production and Injection Wells	Held in mud sumps for drying.	Dispose of at Class II Monofill Facility Landfill[1]

[1] All numbers are approximate.

[2] Waste will be tested for hazardous characteristics before disposal. Non- hazardous drilling wastes would go the Class II Monofill Facility landfill. Hazardous wastes would be sent to a Class I landfill.

Table 5.13-2
LANDFILLS AND TSDFs, SALTON SEA UNIT 6 PROJECT

Landfill/TSDF Station	Phone Number	Location	Class	Permitted Capacity	Annual Usage	Remaining Capacity (cu yd)	Estimated Closure Date	Approximate Distance from Site (in miles)	Comments
Imperial County Niland Landfill	No phone	Coff Road North of Beal Road	Class III	13 tons/day (55 tons/day peak)	634 tons/yr	29,118 cubic yards as of Jan. 1, 2001	2008 with no diversion or 2003 if Brawley diverts to Niland	10	County landfills will not accept drilling or filter-cake wastes without additional approval. This landfill accepts residential community waste only.
Imperial County Salton City Landfill	No phone	South of S22 and west of Hwy 86	Class III	5.1 tons/day (10 tons/day peak)	395 tons/yr	29,531 as of Jan. 1, 2001	2019	20	County landfills will not accept drilling or filter-cake wastes without additional approval. This landfill accepts residential community waste only.
Imperial County Imperial Landfill	No phone	3 miles west of Forrester Rd. on Worthington Rd.	Class III	21 tons/day (130 tons/day peak)	1,729 tons/yr	131,668 as of Jan. 1, 2001	2022 with no diversion or 2004 with diversion from Brawley	20	County landfills will not accept drilling or filter-cake wastes without additional approval. This landfill accepts residential community waste only.
Allied Imperial Landfill (Valley Environmental Services)	760.353.1100	104 E Robinson Rd., Imperial, CA	Class III	4,892,500 cubic yards	270,000 cubic yards	3,812,500 cubic yards	2014-current capacity	20	Will not accept drilling or filter-cake wastes. Has purchased 160-acres of land for future expansion.
Desert Company, Monofill Facility (a CE Obsidian Energy LLC affiliate)	(760.348.4032)	Off of Highway 78 south of Kane Spring	Class II	For new cell: 1.3 million cubic yards	Permitted 510 tons/day	1.3 million cubic yards (to begin operating by Sept. 2003)	2012 – new cell	13	Dedicated to drilling and filter-cake wastes from geothermal plants owned by the Applicant. Additional land has already been permitted to extend landfill use.

Table 5.13-2 (continued)
LANDFILLS AND TSDFs SALTON SEA UNIT 6 Project

Landfill/TSDF Station	Phone Number	Location	Class	Permitted Capacity	Annual Usage	Remaining Capacity (cu yd)	Estimated Closure Date	Approximate Distance from Site (in miles)	Comments
Safety Kleen Buttonwillow Landfill	661.762.6200	2500 Lokern Road Buttonwillow, CA 93206	I	10.87 million cubic yards permitted	130,000 tons/yr	1st cell of 10.87 million cubic yd project built, currently 941,000 cubic yards remains of 1st cell.	2100 – if all currently permitted cells are built, assuming current usage rates.	320	The first cell of the 10.87 million cubic yard facility has been built and 941,000 cubic yards (9 years) remains of this capacity.
Safety Kleen Imperial County Landfill	760.344.9400	5295 Garvery Road Westmorland, CA 92281	I	For new facility: 1.8 million cubic yards	100,000 tons/yr	1.8 million cubic yards (to begin operations in June 2002)	2030	15	An additional 860,000 cubic feet landfill project has already been permitted to extend landfill use.
Chemical Waste Management Kettleman Hills Landfill	559.386.9711	35251 Old Skyline Road Kettleman City, CA 93239	I, II, III	499 acres permitted for landfill use	1,000,000 tons/yr	5 million cubic yards in existing facility. Another 5 million cubic yards pending permit modification.	2007 with existing facility only. 2012 with permit modification.	370	Facility plans to expand as needed. They have 499 acres available that may potentially be permitted.

NOTES:

cu yd = cubic yards
NA = not available
TSDF = treatment, storage, and disposal facility

Table 5.13-3
SUMMARY OF ANTICIPATED OPERATING WASTE STREAMS AND MANAGEMENT METHODS

Waste Stream	Waste Stream Classification	Estimated Amount	Estimated Frequency of Generation	Waste Management Method	
				On Site	Offsite Treatment
Filter-cake of brine solids from dewatering process	Non-hazardous[3]	120 tons	Daily	Store for less than 1 year[4]	Waste Disposal Facility
Sulfur byproduct from H_2S abatement system	Non-hazardous[3]	2.5 tons	Daily	Store for less than 1 year[4]	Waste Disposal Facility
Used hydraulic fluids, oils, grease, oily filters	Recyclable Hazardous	Less than 5 US gallons	Daily	Store for less than 90 days	Recycle
Spent lead acid batteries	Recyclable Hazardous	2 batteries	Yearly	Store for less than 1 year	Recycle
Laboratory Waste	Hazardous	600 gallons	Yearly	Store for less than 90 days	Waste disposal facility
Used oil from oil/water separator	Recyclable Hazardous	100 gallons	Month	In oil/water separator	Recycle
Oily rags	Non-hazardous	55 gallons	Every 2 months	Store for less than 1 year	Laundry (permitted to wash oil rags)
Cooling Tower Blowdown	Non-hazardous	621,000 lbs	Hourly	Store for less than 1 year	Injection well
Clarifier Effluent	Non-hazardous	9,336,000 lbs	Hourly	Store for less than 1 year	Injection well
Brine Pond	Non-hazardous	2,700,000 gallons	Yearly	Store for less than 1 year	Injection well
Brine Pond Solids	Hazardous	16,700 tons	Yearly	In brine pond	Class I hazardous waste disposal facility
Spent activated carbon from benzene abatement	Recyclable/Reactivated by Manufacturer	20 tons	Per complete reactivation (approx. every 3 years)	Store spent material for less than 90 days	Reactivated by manufacturer every 1-7 years
Scale and cleaning solvents	Hazardous	150,000 cubic feet	Every 2-3 years from maintenance	Store for less than 90 days	Class I hazardous waste disposal facility

[3] Waste will be tested for hazardous characteristics before disposal. Non-hazardous wastes would go to the Class II Monofill Facility landfill. Hazardous wastes would be sent to a Class I landfill.

[4] If any load of waste were determined to be hazardous, the load would be stored on site for no longer than 90 days.